WE CLAIM:

1. Method for determining the acid concentration of an amine solution carrying hydrogen sulfide and carbon dioxide received from sour gas comprising the steps of determining the conductivity of a first liquid stream containing said hydrogen sulfide, said carbon dioxide and heat stable salts in said amine solution; removing significantly all of said heat stable salts from said first liquid stream to form a second liquid stream; determining the conductivity of said second liquid stream containing said hydrogen sulfide and said carbon dioxide without said heat stable salts; removing significantly all of said hydrogen sulfide from said second liquid stream to form a third liquid stream; determining the conductivity of said third liquid stream containing said carbon dioxide without said hydrogen sulfide and said heat stable salts; and analysing said conductivity measurements of said first, second and third liquid streams to obtain said acid gas loading of said amine solution.

2. Method as in claim 1 wherein said amine solution is a rich amine solution.

3. Method as in claim 1 wherein said amine solution is a lean amine solution.

4. Apparatus for determining the acid concentration of an amine solution carrying hydrogen sulfide and carbon dioxide received from sour gas comprising a first analytical cell for measuring the conductivity of a first liquid stream containing said hydrogen sulfide, said carbon dioxide and heat stable salts within said amine solution, a second analytical cell for measuring the conductivity of said second liquid stream containing said hydrogen sulfide and said carbon dioxide without said heat stable salts, a hydrogen sulfide remover for acting on said second liquid stream and removing said hydrogen sulfide thereby to form a third liquid stream, a third analytical cell for measuring the conductivity of said third liquid stream containing said carbon dioxide without said hydrogen sulfide and said heat stable salts and a computing device to analyse said measurements of said conductivity of said first, second and third analytical cells and to produce a value for said acid concentration of said amine solution.

5. Apparatus as in claim 4 wherein said heat stable salt remover is an ion exchange bed.

6. Apparatus as in claim 5 wherein said hydrogen sulfide remover is a reboiler.

7. Apparatus as in claim 4 wherein said computing device is operable to receive signals from said first, second and third analytical cells and to calculate said value for said acid concentration of said amine solution.

8. Apparatus as in claim 7 wherein said computing device is a controller or a microprocessor.